

Claims:

1. (original): A method for extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of  $n$  by  $n$  blocks of data subjected to affine geometric distortion;

spatially translating the blocks according to a spatially varying translation to compensate for an assumed affine geometric distortion; and

extracting the watermark from the translated blocks of data.

2. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of blocks, which data has been subjected to affine geometric distortion;

accumulating said blocks in a set of a predetermined number of groups of 8 by 8 blocks;

converting the accumulated blocks into spatial domain;

spatially translating the spatial domain accumulated blocks to compensate for an assumed affine geometric distortion;

summing the translated blocks; and

extracting the watermark from the summed translated blocks.

3. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 2, where said extracting the watermark comprises calculating discrete cosine transform values of the summed translated blocks.

4. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 2, where said spatially translating is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

5. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of  $n$  by  $n$  blocks, which data has been subjected to affine geometric distortion;  
accumulating said blocks in a set of a predetermined number of groups of  $n$  by  $n$  blocks;  
converting the accumulated blocks into spatial domain;  
spatially translating the spatial domain accumulated blocks to compensate for an assumed affine geometric distortion;  
summing the translated blocks; and  
extracting the watermark from the summed translated blocks.

6. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 5, where said extracting the watermark comprises calculating discrete cosine transform values of the translated blocks.

7. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 5, where said spatially translating is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

8. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 5, where the value of  $n$  is 8.

9. (original): A method for extracting a watermark from data containing a watermark comprising the steps of:

receiving data containing a watermark, which data has been subjected to affine geometric distortion;  
accumulating said data as  $n$  by  $n$  blocks of data;

spatially translating the blocks of data to compensate for affine geometric distortion;  
performing DCT transformation of said  $n$  by  $n$  blocks of data; and  
extracting the watermark from the translated blocks of transformed data.

10. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 9, where the value of  $n$  is 8.

11. (original): A method for extracting a watermark from data containing a watermark comprising the steps of:

receiving data containing a watermark, which data has been subjected to affine geometric distortion;

accumulating said data into a predetermined number of  $n$  by  $n$  accumulated blocks of data according to a mapping algorithm of an assumed affine geometric distortion; and

extracting the watermark from the accumulated blocks of data.

12. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 11, where said mapping algorithm comprises a lookup table.

13. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 11, where the value of  $n$  is 8.

14. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 11, further comprising performing DCT transformation of said  $n$  by  $n$  accumulated blocks of data and said extracting the watermark from the DCT transformed  $n$  by  $n$  accumulated blocks of data.

15. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 14, where said mapping algorithm comprises a lookup table.

16. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of  $n$  by  $n$  blocks, which data has been subjected to affine geometric distortion;

accumulating said blocks into a set of a predetermined number of groups of  $n$  by  $n$  accumulated blocks according to a mapping algorithm of an assumed affine geometric distortion; and

extracting the watermark from the accumulated blocks.

17. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 16, where said accumulating said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

18. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 16, where the value of  $n$  is 8.

19. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 16, where said extracting the watermark comprises:

converting the accumulated blocks into spatial domain;

spatially translating the spatial domain of each accumulated block in each group by an associated translational shift; and

summing the translated blocks in each group to obtain a set of summed blocks, and said extracting the watermark extracts the watermark from the set of summed blocks.

20. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 19, where said accumulating said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises

determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

21. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 19, where the value of  $n$  is 8.

22. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 19, further comprising performing a translational search of the summed blocks to find the translation that results in the most statistically significant watermark being extracted and extracting the watermark from the translated blocks yielding the most statistically significant watermark.

23. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 22, where said extracting the watermark comprises calculating discrete cosine transform values of the accumulated blocks.

24. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 23, where said accumulating said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

25. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of blocks, which data has been subjected to affine geometric distortion;

storing said blocks in a set of predetermined groups of 8 by 8 blocks;

converting the blocks into spatial domain;

spatially translating the spatial domain accumulated blocks to compensate for an assumed affine geometric distortion; and

extracting the watermark from the translated blocks.

26. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 25, where said extracting the watermark comprises calculating transform values of the blocks.

27. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 25, where said spatially translating is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

28. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of  $n$  by  $n$  blocks, which data has been subjected to affine geometric distortion;  
storing said blocks in a set of predetermined number of groups of  $n$  by  $n$  blocks  
converting the blocks into spatial domain;  
spatially translating the spatial domain accumulated blocks to compensate for an assumed affine geometric distortion; and  
extracting the watermark from the translated blocks.

29. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 28, where said extracting the watermark comprises calculating transform values of the blocks.

30. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 28, where said spatially translating is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises

determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

31. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 28, where the value of  $n$  is 8.

32. (original): A method for extracting a watermark from data containing a watermark comprising the steps of:

receiving data containing a watermark, which data has been subjected to affine geometric distortion;

storing said data as  $n$  by  $n$  blocks of data;

spatially translating the blocks of data to compensate for affine geometric distortion;

performing a transformation of said blocks of data; and

extracting the watermark from the translated blocks.

33. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 32, where the value of  $n$  is 8.

34. (original): A method for extracting a watermark from data containing a watermark comprising the steps of:

receiving data containing a watermark, which data has been subjected to affine geometric distortion;

storing said data into a predetermined number of  $n$  by  $n$  blocks of data according to a mapping algorithm of an assumed affine geometric distortion; and

extracting the watermark from the accumulated blocks of data.

35. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 34, where said mapping algorithm comprises a geometric transform.

36. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 34, where the value of  $n$  is 8.

37. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 34, further comprising performing a transformation of said  $n$  by  $n$  accumulated blocks of data and said extracting the watermark from the transformed  $n$  by  $n$  blocks of data.

38. (original): A method for extracting a watermark from data containing a watermark as set forth in claim 37, where said mapping algorithm comprises a geometric transform.

39. (original): A method of extracting a watermark from compressed data containing a watermark comprising the steps of:

receiving compressed data containing a watermark in the form of  $n$  by  $n$  blocks, which data has been subjected to affine geometric distortion;

storing said blocks into a set of a predetermined number of groups of  $n$  by  $n$  blocks according to a mapping algorithm of an assumed affine geometric distortion; and

extracting the watermark from the accumulated blocks.

40. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 39, where said accumulating said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

41. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 39, where the value of  $n$  is 8.

42. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 39, where said extracting the watermark comprises:



converting the blocks into spatial domain;  
spatially translating the spatial domain of each accumulated block in each group by an associated translational shift; and  
summing the translated blocks in each group to obtain a set of summed blocks, and said extracting the watermark extracts the watermark from the set of summed blocks.

43. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 42, where said storing said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.

44. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 42, where the value of  $n$  is 8.

45. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 42, further comprising performing a translational search of the summed blocks to find the translation that results in the most statistically significant watermark being extracted and extracting the watermark from the translated blocks yielding the most statistically significant watermark.

46. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 45, where said extracting the watermark comprises calculating transform values of the accumulated blocks.

47. (original): A method of extracting a watermark from compressed data containing a watermark as set forth in claim 46, where said storing said blocks is repeated for different assumed affine geometric distortions, and said extracting the watermark further comprises determining the most statistically significant extracted watermark for the different assumed affine geometric distortions.